User Guide

Atmospheric Generator

Model 1.30 & 1.31

(Revision A/e, April 2015, © MDG Fog Generators Ltd)

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USER GUIDE

Congratulations on your purchase of the ***MDG theONE™***. These original instructions describe the use of this Atmospheric generator.

MDG manufactures fog generators since 1980. Our fog systems have been used in numerous applications including firefighters' training, the motion picture industry, theatres, theme parks, flight simulators, and also educational, worship and touring venues throughout the world. With proper care, we are confident your ***MDG theONE™*** will provide you with years of quality service.

CAUTION

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

CAUTION

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

CAUTION

This equipment must always be disconnected from its power source during service or when replacing parts.

HOW TO READ THIS USER GUIDE

WARNING and **CAUTION** are used throughout this manual to forewarn of possible danger to the users if precautions are not observed. As is customary in military and some commercial manuals, the precautions will always precede the steps to which it refers so that the users will be aware of any potential danger before performing the task.

WARNING and **CAUTION** labels are key equipment parts. Do not remove, change or cover these labels. If the labels are not readable, contact ***MDG Fog Generators Ltd***.

BOLD TEXT: Contains important information, cautionary steps and warnings that should be read and understood prior to installing the unit.

BOLD and ITALIC TEXT: pertains to product names and trademarks, proprietary names and products made by MDG Fog Generators Ltd.

Please read the following instructions carefully and completely before installing, pressurizing and turning on the Fog Generator.

COPYRIGHT NOTICE

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theONE

The ***MDG theONE*** is a revolutionary, digital, dual mode atmospheric generator.

Its simple and efficient multi-level User Interface, accessible from the backlit LCD panel, allows for a gradual switch between either mode seamlessly using various networking protocols, DMX-512-A USITT and RDM ANSI E1.20. Each parameter is set into specific presets, but can be accessed and redefined by advanced users.

The networking capability of the ***MDG theONE*** allows the user to install the generator as part of an existing network.

The generator pumps its fluid from its 20 l (5.28 US gal) container into a pressurized reservoir.

The two interconnected 9 kg (20 lb) CO_2 (or N_2) bottles sit in separate cradles in the universal standard rolling rack, for easier storage and freight.

The 100~250V, 50/60Hz universal power supply, dual rigging points, and supplied half-couplers make the ***MDG theONE*** especially fit for ready-to-go touring conditions (indoor use or outdoor with shelter).

QUALIFIED PERSONNEL

MDG theONE systems will perform as designed but are to be installed, operated, and serviced by trained personnel. Installation, operation and servicing of this equipment require trained personnel with technical skills in electrical theory and fluid dynamics. This manual is not a substitute for qualified technicians or local authorities on electricity, gas, fluid, or engineering, and therefore does not supersede, amend or void local safety installation practices. Please refer to local authorities for further information.

NEED A LITTLE HELP?

At MDG, we try our best to provide you with complete information for our products. Despite it all, sometimes, a little more is required due to the specifics of your project and installation. We're looking forward to go that extra mile for you. Contact us:

By Phone: +1-800-663-3020 +1-514-272-6040
By Fax: +1-514-722-3229
By e-mail: info@mdgfog.com On the Web: www.mdgfog.com

By Mail: **MDG Fog Generators Ltd.**
10301, Avenue Pelletier
Montréal, QC, H1H 3R2
Canada

Please note that our business hours are from 08h30 to 12h00 and from 12h30 to 17h00 (8:30AM to 12:00PM and 12:30PM 5:00PM), Eastern (GMT -5).

PRE-INSTALL

ELECTRICAL REQUIREMENTS

- Operating voltage: 100-250 VAC, single phase. 50/60 Hz, 1480 W.
- Ground / Earth connection **REQUIRED**.

ENVIRONMENTAL REQUIREMENTS

Indoor use or outdoor with shelter

Dry room conditions, 90 % relative humidity @ 50 ˚C (122 ˚F), and non-condensing -30° C (-22° F) to 50° C (122° F) operating temperature

1 m (3.3 ft) clearance on all sides and in front of the equipment required.

Dust-free space

Storage conditions: -40 ˚C to 60 ˚C (-40 ˚F to 140 ˚F), 80 % relative humidity @ 60° C (140 ° F).

CABLE REQUIREMENTS

Power input:	1.5 mm (14 AWG), 3-wire, 90 ˚C copper, CE UL/CSA compliant cable
DMX/RDM data:	Dual twisted pair 0.75 mm (22 AWG) + shield, XLR-5 type connector, CE UL/CSA compliant cable
Network data:	Network cable category 5 (four "twisted" wire pairs), with standard RJ-45 plugs. CE UL/CSA compliant cable
USB data:	Standard USB 2.0 cable, A to B Male/Male type, CE UL/CSA compliant cable

Note: Install Power and Data in separate conduits, or as per local electrical code requirements.

TUBING REQUIREMENTS

theONE touring	Included.
theONE standalone	1/4" SS flexible braided Hose, end connection female JIC 37° flare 3/8" OD plastic hose for the liquid input

CAUTION: If the installation requires tubing, before linking the tubing to this system or any of its components, it is mandatory that all the tubing be rinsed, for at least 30 min, with pressurized hot water (minimum 60 psi @ 170 °F / 414 kPa @ 77 °C) to remove all contaminants, dust and metal particles.

UNPACKING

The system is carefully packed at the factory for shipment. Each device is fitted into cardboard box. Upon arrival, carefully inspect the box and its content for any shipping damage.

If **ANY** damage is found, immediately report it to the freight service and to ***MDG Fog Generators Ltd*** within 24 hours.

When opening the container, ensure that you do not damage the exterior finish of the enclosure. Save all packing material for eventual equipment factory return.

- ✓ **theONE** atmospheric fog generator
- ✓ **theONE** rack with gas bottles, a 20 L (5.8 US gal) liquid container and an external fan
- ✓ **theONE** user's manual, and quick start

SETTING UP

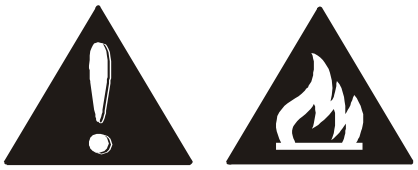
WARNING

It is recommended that this system be operated under the supervision of personnel who have read and understood this manual.

Never install this unit overhead. Do not operate closer than 2 m (6.5 ft) from personnel.

The *MDG theONE* fog generator and its fluid bottle must be operated and installed in an upright position and in a well-ventilated area.

When not in use, ALWAYS turn off the main power switch located on the back panel, and unplug the generator.



WARNING

RISK OF FIRE HAZARD – Do not install the *MDG theONE* Fog Generator output closer than 2 m (6.5 ft.) from any open flame.

GAS AND FLUID REQUIREMENTS

GAS

WARNING

To avoid fire hazard as well as explosion risk, use **ONLY industrial** grade Carbon Dioxide gas (CO_2) or **industrial** grade Nitrogen gas (N_2).

WARNING

In the European Community, the gas cylinder and regulator must be compliant with the Pressure Vessel Directive.

In North America, the gas cylinder must be manufactured, inspected and tested in accordance with U.S. Department of Transportation (DOT) 3AL and Transport Canada (TC) 3ALM requirements.

WARNING

The CO_2 gas regulator and the N_2 regulator do not use the same thread to mate with the cylinder. Make sure to use a CO_2 gas regulator with the CO_2 gas cylinder and to use a N_2 gas regulator with the N_2 cylinder.

WARNING

To prevent gas leak and drop of pressure, ALWAYS use a **nylon or Teflon washer** when connecting the regulator to the cylinder.

FLUID

WARNING

Use only MDG Neutral Fog Fluid. Not doing so **will void the warranty, may damage the generator, and cause serious injury**.

Do not add or mix any other particles or liquids to the MDG Neutral ™ Fog Fluid.

The MDG Neutral ™ Fog Fluid produces a pure white non-toxic fog.

MDG Neutral ™ Fog Fluid is available at authorized MDG dealers or distributors.

INSTALLING THE *MDG theONE*

Exercise caution when selecting the location to install or use this equipment:

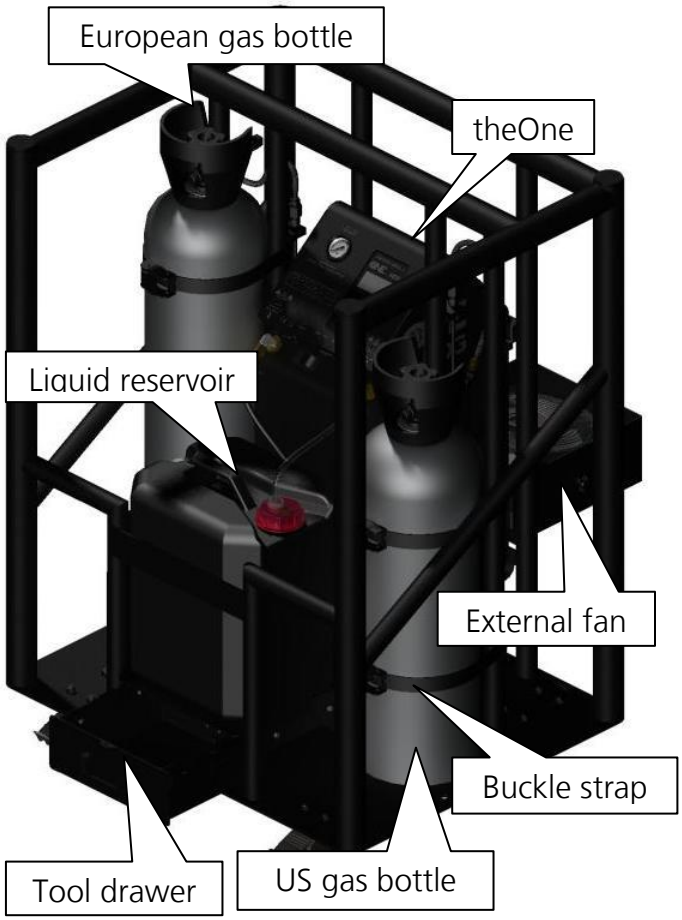
- Install the ***MDG theONE*** away from rain, wind, heavy dust or any harsh environment situations (indoor or outdoor with shelter).
- Ensure available space for all conduits and tubing runs, if you are using the ***MDG theONE*** without its rack.
- Install the ***MDG theONE*** as close to fluid supply as possible, when using the ***MDG theONE*** without its rack.
- The ***MDG theONE*** requires 1 m (3.28 ft) of clearance on each side and 2 m (6.56 ft) to the front.

MDG THEONE WITH ITS RACK

The ***MDG theONE*** touring (with its rack) comes almost ready to use.

- Install the gas bottles, if they are not already in the rack. *Tighten the buckle straps.*
- Connect *both* bottles to the gas inlet flexible braided Hoses.
- Open the gas bottles, and check the gauge, on top of the generator, to verify there is enough pressure (Pressure > 100 psi / 690 kPa).
- Replace the seal liquid reservoir cap with the cap equipped with the liquid line and the vent. Keep seal cap for future use.
- Insert the liquid line in the liquid input fitting.
- Connect the data wiring (DMX/RDM or Network), if you want to use remote control.
- Plug the power cord,

  100–250 VAC, 50/60 Hz, 1480 W.



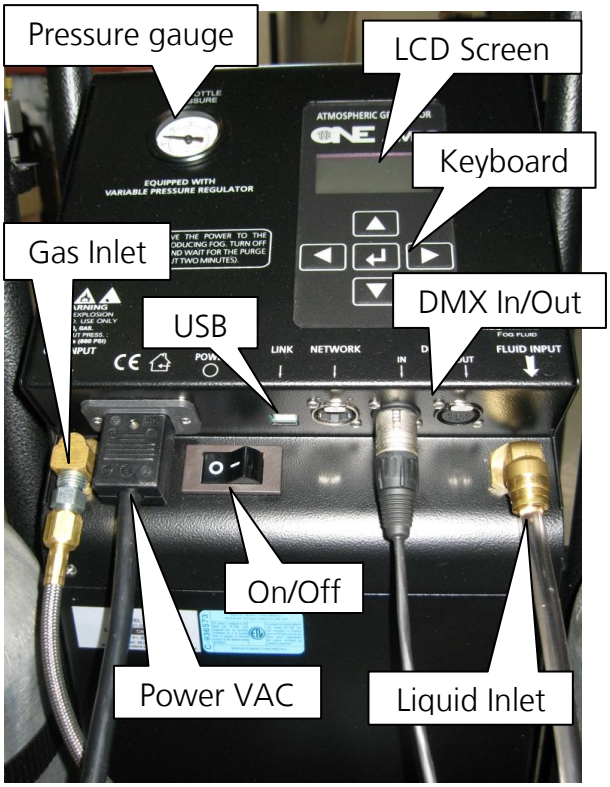
The MDG theONE is ready to be powered.

See Touring Rack chapter for more details.

MDG theONE STANDALONE

- Connect the gas inlet to a gas bottle via a flexible braided Hose.
- The gas inlet is a 1/4" male JIC 37° flare fitting.
- Connect the liquid reservoir to the liquid inlet via a 3/8" plastic tube.
- Do not forget to open the vent on the reservoir.
- Leave the reservoir as close as possible to the ***MDG theONE***.
- Connect the data wiring (Male XLR-5 connector for DMX/RDM, RJ45 for network).
- Connect the power cord.

  100–250 VAC, 50/60 Hz, 1480 W.
- Open the gas bottle, and check the gauge, on top of the generator, to verify there is enough pressure (pressure > 100 psi / 690 kPa - MAX 2500 psi / 17.2 MPa).

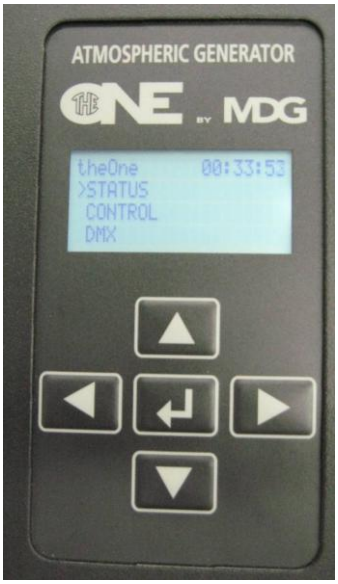


The ***MDG theONE*** is ready to be powered.

WORKING WITH THE *MDG theONE*

The user Interface of the ***MDG theONE*** includes a LCD 4x20 characters white LED backlight screen, with five (5) tactile buttons, located on top of the generator.

START THE *MDG theONE*



Switch On the power.

The ***MDG theONE*** will display during four (4) seconds, the following message:

theONE, by MDG
Version x.xx

Testing BootLoad….

These four seconds allow you to connect the generator to your PC, via a USB cable, to update the firmware of the control board (*see BootLoader* for further details).

Then, the ***MDG theONE*** will display during two (2) seconds, the following message:

theONE
by
MDG Fog Generators Ltd
(V: x.xx – F: y.yyy)

where 'x.xx' is the version of your generator, and 'y.yyy' is the firmware of the program.

The program will load the configuration parameters, saved in the EEPROM memory.

Finally, the screen will display the menu.

THE *MDG THEONE* MENU

The user can scroll in the menu by using the buttons of the keyboard:

'▼' moves the selection to the next menu (same level), or decrease a data value.
- When at the end of a list, the program moves back to the first item of this list.
- If the selected menu is a **data input menu**, keeping this key pressed will increase the value more rapidly.
- In a **data input menu**, when the value reaches its maximum value, the program continues with the minimum value.

'▲' moves the selection to the previous menu (same level), or increase a data value.
- If the item is the first of a menu, the program moves the selection to the last item of that menu.
- If the selected menu is a **data input menu**, keeping this key pressed will decrease the value more rapidly.
- In a **data input menu**, when the value reaches its minimum value, the program continues with the minimum value.

'◀' moves the last selection to the upper level
- This key has no effect in the first level.
- In a **data input menu**, pressing this key permits to exit the menu without changing any value (escape).

'▶' moves the selection to the sub-menu
- This key has the same effect that the key '↵', when scrolling through the menus.

'↵' confirms a selection or data value.
- This key has the same effect that the key '→', when scrolling through the menus.
- In a **toggle menu**, this key confirms the selection and moves the cursor back to the upper level menu.
- In a **data input menu**, this key confirms the value of the data and moves the cursor back to the upper level menu.

LCD SAVER

The program can automatically switch off the LCD screen (menu display and backlight) if there is no keyboard activity. The user can choose between a 30 second and a 2 minute delay in the Settings Menu (« SETTINGS ▶ LCD SAVER »).

When the LCD Saver is activated, just press any key of the keyboard to re-activate the LCD screen functions.

The user can also deactivate the LCD saver by selecting the OFF option.

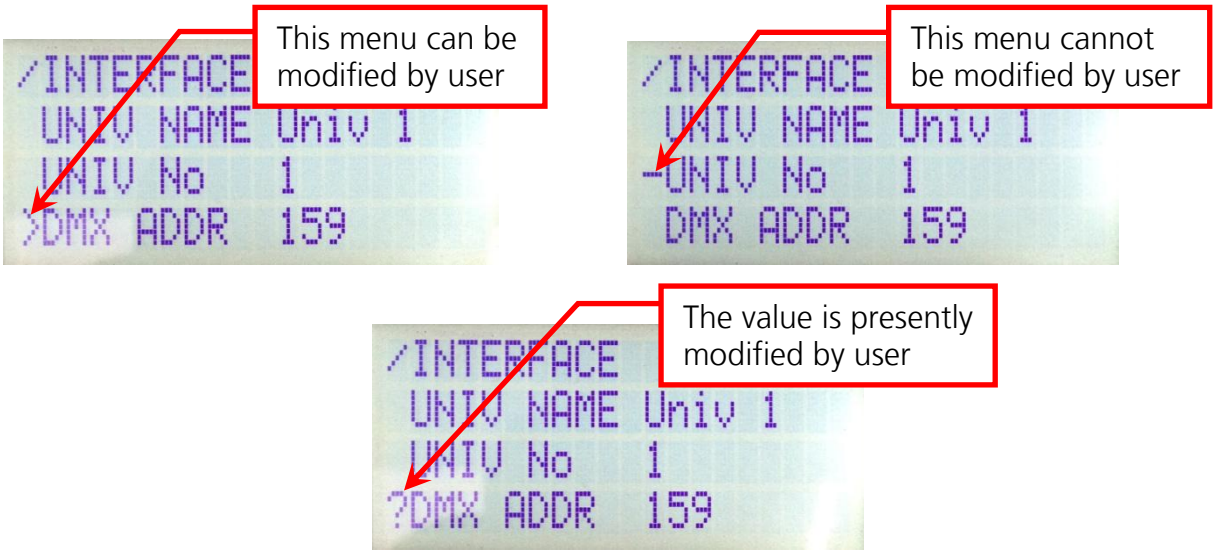
MENU TREE

The menu is divided in four (4) main menus:

- **Status Menu** summarizes all the state of the fog generator. None of its sub menus can be modified.
- **Control Menu** allows the user to control locally the ***MDG theONE***. All its sub menus can be set, as long as the generator is not in DMX/RDM or Ethernet mode.
- **Interface Menu** allows the user to define or verify the communication via DMX/RDM or Network.
- **Setting Menu** summarizes general configuration of the generator.

The menu is refreshed every second.

- Items display with a « – » character are state messages or parameters, updated by the program.
- The user cannot modify them.
- Items display with a « **>** » character are control parameters.
- The user, within specific ranges or choices, can **MODIFY** them. In user input mode, the value or the choice is preceded with a « **?** »



The tree menu architecture is explained below. Items highlighted in blue are state menu (-), and those highlighted in yellow are control menu (>).

STATUS	Status menu	
STATE	----	*Status **State** string*
	UNIT OFF	*- the generator is **off***
	xx% HEAT	*- the generator is **heating**, but not ready*
	PURGE	*- the generator is **purging** the heating module*
	READY	*- the generator is generator is **ready** to produce fog*
	FOG ON	*- the generator is producing **Fog***
	VENT	*- the generator is **venting** the internal reservoir*
	FAIL	*- the generator is off, due to a **failure** (see Diagnostic)*
ERROR	----	***Error** message when **State = FAIL** (see Diagnostic)*
MODE	----	***Mode** status*
	HAZE	*- **Haze** mode*
	FOG	*- **Fog** mode*
TEMP.	----	***Temperature** status (heating module)*
	TOO LOW	*- temperature **too low***
	OK	*- temperature within specifications (**ready**)*
	TOO HIGH	*- temperature **too high***
PRESSURE	xx.x	*Current reservoir **pressure***
LEVEL	----	*Lower / Upper liquid level*
	LO / LO	*- the liquid level is **below** the lower level*
	HI / LO	*- the liquid level is **above** the lower level, but **below** the upper level*
	HI / HI	*- the liquid level is **above** the upper level*
RUN TIME	xx.x	*Total Run Time (decimal hour)*
LAST ERR.	xxxxx	*Five Last Errors (see Troubleshooting)*
CONTROL		*Control menu*
UNIT	----	***Unit** toggle*
	OFF	*- the generator is **off***
	ON	*- the generator is **on***
HAZE/FOG	----	***Fog** toggle*
	OFF	*- the haze/fog is **off***
	ON	*- the haze/fog is **on***
MODE	----	***Mode** toggle*
	HAZE	*- Haze mode*
	FOG	*- Fog mode*

PRES HAZE	xx.x	***HAZE*** *operating* ***pressure*** *(see Units)*
PRES FOG	xx.x	***FOG*** *operating* ***pressure*** *(see Units)*
EXT. FAN	xxx	*External* ***fan speed*** *(0 - 255)*

INTERFACE *Network /DMX/RDM Menu*

COMM.	----	***Communication*** *toggle*
	AUTO	*- the generator is controlled by* ***DMX/RDM*** *if a signal is present, or* ***locally*** *if there is no signal*
	LOCAL	*- the generator is controlled by the* ***keyboard ONLY***
	DMX	*- the generator is controlled by* ***DMX/RDM ONLY***
	ETHERNET	*- the generator is controlled by* ***Ethernet ONLY***
DEV LABEL	yyyyyy	***RDM Device Name*** *Network / RDM*
DEV ID	yyyyyy	***RDM Device ID*** *Network / RDM*
UNIV NAME	yyyyyy	***Universe Name*** *on the Network*
UNIV No	yyy	***Universe Number*** *on the Network (1 to 128)*
DMX ADDR	yyy	***DMX Address*** *(1 to 508) Network / DMX / RDM*
1 UNIT	yyy	*Channel #1 value: OFF < 50% (127) < ON*
2 MODE	yyy	*Channel #2 value: HAZE < 50% (127) < FOG*
3 OUTPUT	yyy	*Channel #3 value: 0% (0) to 100% (255)*
4 HAZ/FOG	yyy	*Channel #4 value: OFF < 50% (127) < ON*
5 EXT FAN	yyy	*Channel #5 value: 0% (0) to 100% (255)*

SETTINGS *Settings menu*

UNITS	----	***Units*** *toggle*
	PSI	*- pressure in* ***psi***
	kPA	*- pressure in* ***kPa***
	BAR	*- pressure in* ***bar***
LCD SAVER	----	***LCD Saver*** *toggle*
	30 s	*- LCD Saver* activated after 30 seconds*
	2 min	*- LCD Saver* activated after 2 min*
	OFF	*- LCD saver is off*
VERSION	x.xx	***Model Version*** *theONE*
FIRMWARE	x.xx	***Program Firmware***

* Just press any key to re-start the Menu.

OPERATING INSTRUCTIONS

The ***MDG theONE*** Generator is quite easy to operate and require no preventive maintenance.

The generator can be controlled either locally, with the keyboard, via DMX (*see DMX control and RDM Control*) or network protocol (*see Network control*). This paragraph focuses on **local control**.

Starting Procedures

Powered up the generator, the control program first checks the level of fluid inside the internal reservoir. If the reservoir is partially empty, the program will start the pumps to fill the reservoir to capacity, except if the reservoir has not been properly vented (*see shutdown procedures*). This procedure may take up to two minutes.

WARNING
If the program is unable to refill the reservoir, a FAIL state will disable the generator (see *Fail State* paragraph).

At this point, the ***MDG theONE*** switches to stand-by mode, and most of the electronic controls are off (pressure, and temperature of the heating module).

When the generator is manually switched to **«**`UNIT ON`**»** mode («`CONTROL ▸ UNIT ▸ ON`»), the program starts the heating cycle («`STATUS ▸ STATE = UNIT ON`»), which will last approximately 7 minutes. When the temperature reaches operating level (READY level), the Automatic Purging System™ (APS™) will be automatically initiated («`STATUS ▸ STATE = PURGE`»).

After the first purging cycle is completed (30 to 60 sec.), the reservoir is vented, and the generator is ready to produce fog («`STATUS ▸ STATE = READY`»).

Operating Mode

The menu «`CONTROL ▸ MODE`» controls the Fog / Haze mode.

- Choosing the HAZE mode will switch the ***MDG theONE*** in a *Haze mode*.
- Choosing the FOG mode will switch the ***MDG theONE*** in a *Fog mode*.

Adjusting the working pressure of the internal reservoir controls the amount of the fog / haze emission.

- «`CONTROL ▸ PRES. HAZ`» sets the working pressure of the Haze Mode
- «`CONTROL ▸ PRES. FOG`» sets the working pressure of the Fog Mode

Fog/Haze Production

- Switching the generator in **«FOG ON»** mode («CONTROL ▸ FOG ▸ ON») starts the production of Fog / Haze. Depending of the mode choice («CONTROL ▸ MODE», or see «STATE ▸ MODE»), the ***MDG theONE*** will start to produce a haze (HAZE mode) or a fog (FOG mode), with an internal pressure defined by the working mode pressure.
- The ***MDG theONE*** will produce fog as long as the control parameters are within specifications, the liquid reservoir filled and the gas bottles pressurized.
- If a critical problem occurs, the program shuts down automatically the fog generator, and displays an error message in the **Status Menu** (see *Fail State* paragraph).
- Switching the MDG ***theONE*** in **«FOG OFF»** mode («CONTROL ▸ FOG ▸ OFF»), automatically initiates the APS™ cycle to clean the heating module.

WARNING

- Never power off a generator while it is producing fog – See the shut down procedures.

- Switching from **HAZE to FOG** mode while the generator is producing haze, the generator will switch mode, then will start to produce fog immediately.
- Switching from **FOG to HAZE** mode while the generator is producing fog, the generator will initiate a 10 seconds purge, and then will start to produce haze.

Shut down procedures

Never shut down the MDG ***theONE*** while making Fog. Power off the generator observing the following sequence:

- **Turn off** the fog emission («CONTROL ▸ FOG ▸ OFF»),
- Wait 1 minute for the purge cycle to complete, and a extra 30 seconds for the depressurization of the reservoir,
- Switch the generator **«UNIT OFF»** mode («CONTROL ▸ UNIT ▸ OFF»),
- Power off the MDG ***theONE*** (by switching off the "MAIN POWER SWITCH" or by removing the MAIN POWER.
- Close the gas bottles.

Switching directly the generator in **«UNIT OFF»** mode by DMX/RDM or Network will yield the same result as above. Wait until complete depressurization before powering off the unit and follow the same procedure.

Auto/Local

In «Local» Mode («INTERFACE ▸ COMM. ▸ LOCAL»), only the keyboard controls the MDG **theONE**.

In «Auto» Mode («INTERFACE ▸ COMM. ▸ AUTO»), the MDG **theONE** is controlled via DMX / RMD if there is a DMX signal on the line, or via the keyboard if there is no signal.

WARNING
In «AUTO Mode», DMX commands always take precedence over Local commands

If the DMX Signal is valid, the menus will be partially disable

Unplug the DMX data wire to control the generator locally.

EEPROM Parameters

The following parameters are saved at each time they are modified

- Communication Mode AUTO/LOCAL/DMX/ETHERNET
- DMX Start Address
- Device Label
- Universe Name
- Units (Pressure)
- LCD Saver

Powering off the MDG **theONE**, the program saves the last set of parameters as follows:

- Mode HAZE / FOG, if User is in Local Mode
- HAZE Pressure If User is in Local Mode
- FOG Pressure If User is in Local Mode
- Universe Address
- Total Run Time

At the next start–up, parameters readings automatically configure the menu for the user.

Default parameters will be loaded if the generator is unable to read the parameters (electrical shutdown during EEPROM writing).

FAIL State

FAIL state mode is initiated if any critical error occurs. In this state, the MDG ***theONE*** is **off,** awaiting an action from the user, and the LCD is flashing.

When error happens, the menu jumps directly to the **Error String** in the **Status Menu**. The last five (5) critical errors are displayed in the LAST ERR String («`STATUS ▸ LAST ERR`»):

- **ERROR = REFILL** **LAST ERR CODE = C**

  This error will occur if the generator is unable to fill the reservoir within a fixed time interval.

  This may be due to a leak from the fluid line between the external reservoir and the generator, or simply that the external reservoir is empty.

- **Error = P. LOW** **LAST ERR CODE = 7**

  This error will occur if the generator is unable to reach the operating pressure within a fixed time interval.

  This may be due to a leaking gas line (between the gas bottle and the generator), a closed or empty gas bottles, a ball valve closed on the gas line or a problem with the pressure transducer.

- **Error = P. HIGH** **LAST ERR CODE = 8**

  This error will occur if the pressure is too high for a specific regime, while the gas flow inlet is fully closed.

  This may be due to a solenoid valve malfunction (electronic or physical blockage), a problem with the pressure transducer, or the heating module partially clogged.

- **Error = HEATER** **LAST ERR CODE = 6**

  This error will occur if the temperature of the heating module is not increasing with the proper thermal ramp.

  This is generally due to a heater cartridge problem. Shut down the generator and restart it. Check the heating process with the value of the Status («`STATUS ▸ STATE ▸ xx% HEAT`»). If the percent is not increasing, the heater cartridges have failed.

  Using the generator in 100-130 VAC will solve the problem temporary if only one cartridge has failed

  Please contact an Authorized Service Center if this problem persists.

- **Error = T. HIGH** **LAST ERR CODE = 4**

  This error will occur if the temperature of the heating module is too high.

  This is generally due to an electronic problem. Shut down the generator and restart it.

  Please contact an Authorized Service Center if this problem persists.

- **Error = T. SAF LAST ERR CODE = 5**

  This error will occur if abnormal temperature difference between the two sensors of the heating module is detected.

  This is generally due to an electronic or a sensor problem. Shut down the generator and restart it.

  Please contact an Authorized Service Center if this problem persists.

- **Error = PCB HIGH LAST ERR CODE = D**

  This error will occur when the internal temperature of the generator is too high.

  This may happen if the external temperature is very high or if the vents of the MDG theONE are partially blocked. Clear out the vents and put the generator in the shade. Shut down and restart the generator.

  Please contact an Authorized Service Center if this problem persists.

- **Error = WD RESET LAST ERR CODE = E**

  This error will occur if the watchdog (software safety) resets the generator.

  This is generally due to software or chip problem. Shut down the generator and restart it.

  Please contact an Authorized Service Center if this problem persists.

DMX CONTROL

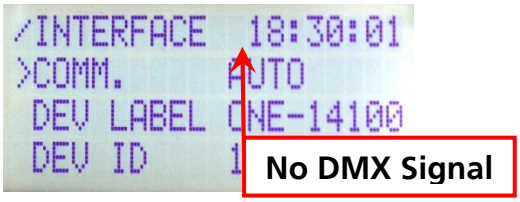
The MDG theONE can be controlled via a DMX512-A USITT standard protocol.

WARNING
*Activating the **«DMX» mode*** («INTERFACE ▸ MODE ▸ DMX»), *controls the MDG theONE only by DMX signal. If the DMX wire is **unplugged** or DMX **signal is lost**, the generator **initiates an automatic shutdown procedure**.*

*Activating the **«AUTO» mode*** («INTERFACE ▸ MODE ▸ AUTO»), *controls MDG theONE by DMX, only if there is a signal. If the DMX wire is **unplugged** or DMX **signal is lost**, the generator **keeps the last DMX values**.*

WARNING
In «AUTO Mode», DMX commands always take precedence over Local commands.

The MDG ***theONE*** provides a simple way to check if there is DMX signal:



The user can change the DMX Start Address in the Interface Menu («`INTERFACE` ▸ `COMM.` ▸ `DMX ADDR`»), and choose any value between 1 and 508 (508+5 = 512, last DMX channel).

The Interface uses five (5) DMX channels:

- Channel 1 **0 (0%)** < UNIT OFF ≤ **128 (50%)** < UNIT ON ≤ **255 (100%)**
- Channel 2 **0 (0%)** < MODE HAZE ≤ **128 (50 %)** < MODE FOG ≤ **255 (100%)**
- Channel 3 **0 (0) – 255 (100%)**, FOG OUTPUT (from minimum to maximum pressure)
- Channel 4 **0 (0%)** < FOG OFF ≤ **128 (50%)** < FOG ON ≤ **255 (100%)**
- Channel 5 **0 (0) – 255 (100%),** EXTERNAL FAN (from minimum to maximum speed)

These channels have the same behaviour that the menus of the local interface (see ***Operating instructions*** paragraph).

RDM CONTROL

The MDG theONE can be controlled via a RDM ANSI E1.20 protocol, an intelligent bi-directional communication utilizing the DMX512 data link.

RDM permits a console or other controlling device to discover and then configure, monitor, and manage intermediate and end-devices connected through a DMX512 network. RDM provides for intelligent control of devices on a DMX512 network, which has not been previously available outside of proprietary networks

RDM Control has the same functionalities than the DMX Control (*see DMX Control*) with bi-directional functions allowing the user to read or write specific functions.

The RMD supported parameters implemented in the MDG theONE are summarized in the following table.

RDM Parameter ID's	Value	GET Allowed	SET Allowed	Comments
DISC_UNIQUE_BRANCH	0x0001			
DISC_MUTE	0x0002			
DISC_UN_MUTE	0x0003			
QUEUED_MESSAGE	0x0020	✓		
STATUS_MESSAGES	0x0030	✓		
SUPPORTED_PARAMETERS	0x0050	✓		
PARAMETER_DESCRIPTION	0x0051	✓		
DEVICE_INFO	0x0060	✓		
PRODUCT_DETAIL_ID_LIST	0x0070	✓		
DEVICE_MODEL_DESCRIPTION	0x0080	✓		Atmospheric Generator
MANUFACTURER_LABEL	0x0081	✓		MDG Fog Generators Ltd
DEVICE_LABEL	0x0082	✓	✓	
SOFTWARE_VERSION_LABEL	0x00C0	✓		
DMX_PERSONALITY	0x00E0	✓	✓	1
DMX_PERSONALITY_DESCRIPTION	0x00E1	✓		
DMX_START_ADDRESS	0x00F0	✓	✓	1 to 508
SLOT_INFO	0x0120	✓		
SLOT_DESCRIPTION	0x0121	✓		
DEFAULT_SLOT_VALUE	0x0122	✓		
IDENTIFY_DEVICE	0x1000	✓	✓	LCD flashes
MDG_NETWORK_UNIVERSE_NUMBER	0x8000	✓	✓	1 < unsigned Word < 128
MDG_NETWORK_UNIVERSE_NAME	0x8001	✓	✓	ASCII text Up to 32 characters
MDG_GENERATOR_STATE	0x8002	✓		ASCII text Up to 20 characters
MDG_LCD_SAVER	0x8004	✓	✓	Unsigned Byte 0=30 s,1=2 min, 2=Off
MDG_COMM	0x8005	✓	✓	Unsigned Byte 0 = AUTO, 1 = LOCAL, 2 = DMX, 3 = LAN

Table 1: RDM Supported Parameters.

NETWORK CONTROL

The network interface, developed by ***Pathway Connectivity Solutions***, supports all major Ethernet protocols:

- ArtNet
- Pathport Protocol
- Strand Shownet
- ETC Net2 eDMX, and ETC Net3
- Streaming ACN (E1.31 sACN)

If you do not have a control program, install ***Pathport Manager*** (**5.2** or above) by downloading the latest build from **www.pathwayconnect.com**.

Before launching ***Pathport Manager 5.2***, the computer's network interface card (NIC) must be set to the same IP domain and subnet mask as the Pathport nodes, or the nodes will be shown as 'questionable (can't fetch props, can't fetch patch)'. The default settings for Pathport nodes are in the **10.x.x.x** IP range with subnet mask of **255.0.0.0**.

If the computer uses a wireless card, you may be obliged to disable it and turn the transmitter off.

If you are using a firewall, disable it too or allow a security exception to allow the program (**Pathport Manager** and **Java) to** communicate through the firewall.

Connect to the ***MDG theONE*** via an Ethernet switch, using a normal Ethernet cable.

Switch the control mode to Ethernet («`INTERFACE ▸ COMM. ▸ ETHERNET`»).

Start ***Pathport Manager 5*** by clicking on the PathportManager5 icon.

Follow the prompts to set up an Administrator account. You must be logged in as Administrator to make configuration changes.

The node will be discovered in the background while you log in, and sorted by current name.

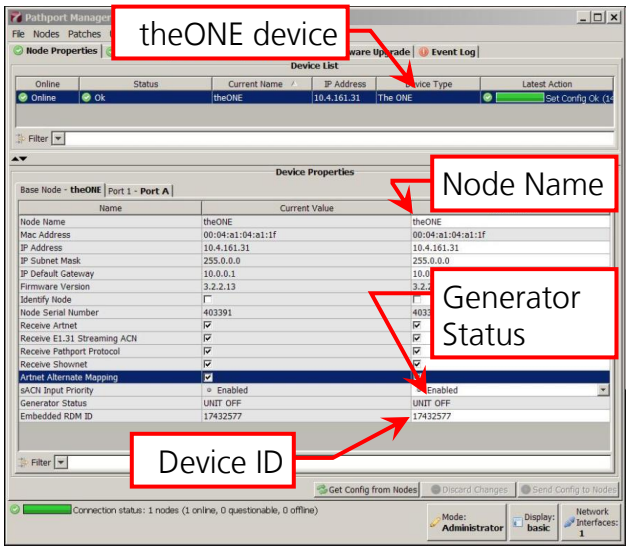
Read carefully the full manual of *PathPort Manager* to learn how to use this program. In this manual, we will focus ONLY on the *MDG theONE* functions.

Node Properties

Click on the ***MDG theONE*** device in the upper **Device List** pane and the base node properties appear in the lower **Device Properties** pane.

The **Embedded RDM ID** is the RDM device ID of the MDG **theONE**. This number is unique and is identical to Device ID in «INTERFACE ▸ DEV ID».

If this ID is different to the ID of the MDG **theONE**, the **Generator Status** field will display «OFFLINE». Modify this field to match both devices ID.

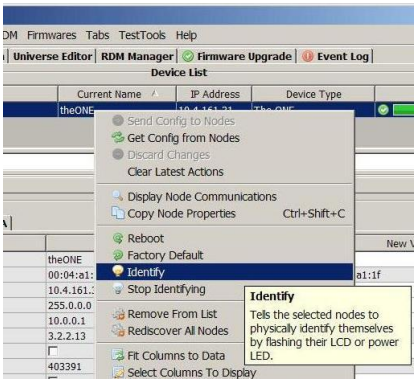


The **Generator Status** is a summary of the status of the fog generator, including the fail status. The message is constantly updated via the Network connection, as long as the MDG theONE is physically connected to the network, and the Communication Mode is switched to Ethernet.

This field is a summation of the «STATUS ▸ STATE» and «STATUS ▸ ERROR» fields. The user cannot modify this field.

If the MDG theONE is not in Ethernet Mode («INTERFACE ▸ COMM ▸ ETHERNET»), the **Generator Status** field will display «OFFLINE».

The **Node NAME** is a field that can be customized by the user. It is recommended to use the serial number of the Atmospheric Generator.



If the Ethernet connection is active, you can identify the generator.

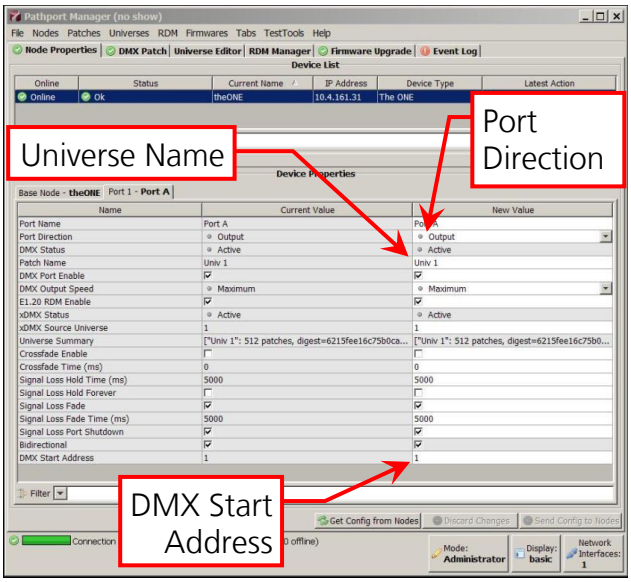
Select the node, press left mouse button, and « **Identify** » menu (or « **Nodes ▸ Identify** » menu).

The LCD screen will start to flash until you press « **Stop Indentifying** »

You can also use the Identify Node property in lower **Device Properties** pane.

When the Ethernet is active, the MDG theONE will act as a DMX or RDM node (see also RDM Control) for all devices connected on its DMX lines (DMX OUT).

Port Properties



It is important to set the Port Direction as **Output**.

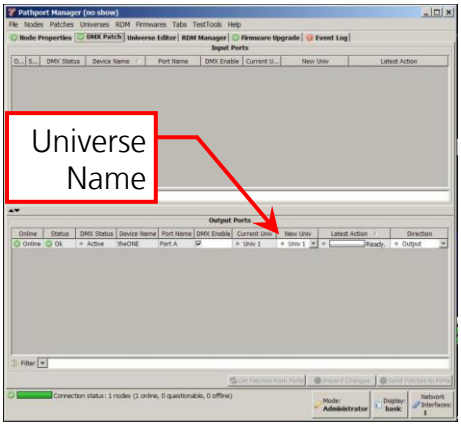
The Universe Name can be assigned in the field **Patch Name**. The value will be automatically updated in the «INTERFACE ▸ COMM. ▸ UNIV NAME».

The **Universe Number** cannot be changed in that pane. It must be changed only in DMX Patch Tab (see next paragraph). However, the **Universe Number** and **Universe Summary** fields are updated as soon as the Universe is modified.

The **DMX Start Address** defines the first DMX channel. Choose any value between 1 and 508 (508+5 = 512, last DMX channel). The **DMX Start Address** can also be modified in «INTERFACE ▸ COMM. ▸ DMX ADDR».

Press ***Send Config to Nodes*** button when you want to update the node.

DMX Patch



Select ***DMX Patch*** tab.

To change **Universe,** select the new Universe.

Pressing ***Send Patch to Ports*** button updates the node.

You can also modify the **Universe Number** in the «INTERFACE ▸ COMM. ▸ UNIV No».

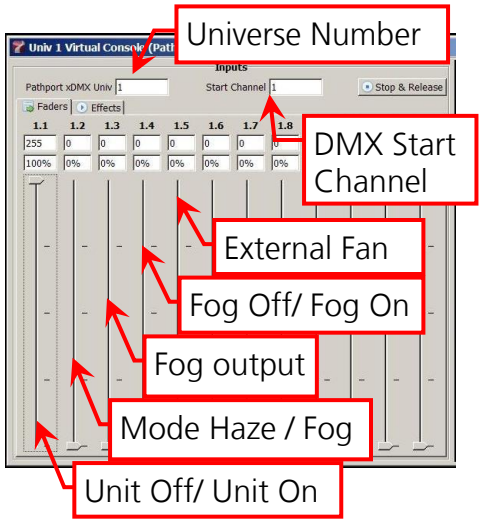
Universe Name is updated in all the panes, as well as on the fog generator («INTERFACE ▸ COMM. ▸ UNIV NAME».).

DMX Control

In the DMX Virtual Console, define the xDMX Universe **X** as well as the DMX Start Channel **Y**.

The first five (5) channels are now configured to control the MDG fog Generator:

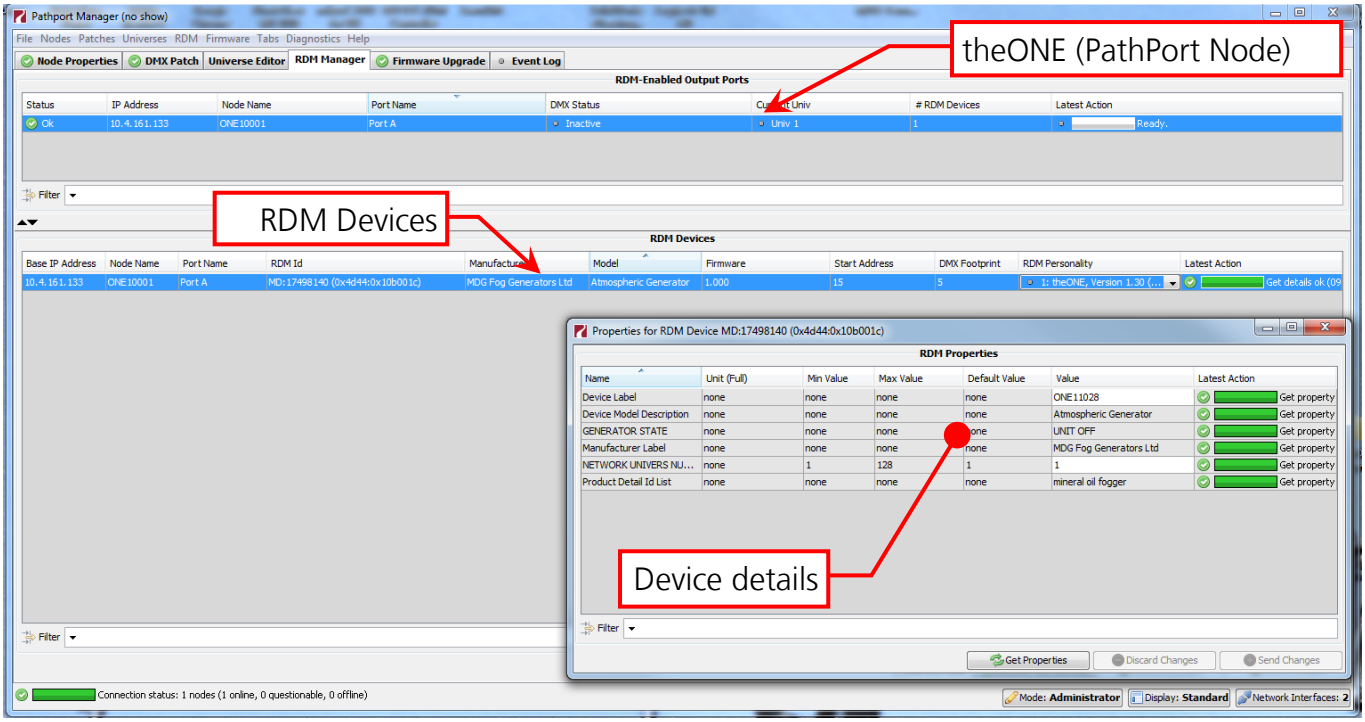
- X.(Y) **0 (0%)** < Unit Off ≤ **128 (50%)** < Unit On ≤ **255 (100%)**
- X.(Y+1) **0 (0%)** < Haze ≤ **128 (50%)** < Fog ≤ **255 (100%)**
- X.(Y+2) **0 (0%) – 255 (100 %)**, Fog output
- X.(Y+3) **0 (0%)** < Fog off ≤ **128 (50%)** < Fog on ≤ **255 (100%)**
- X.(Y+4) **0 (0%) – 255 (100%)**, External fan



RDM Control

The last version of the ***PathPort Manager*** (version 5.1.1 and above) provides the user with a front-end interface allowing the discovery, configuration and monitoring of RDM devices connected to Pathport Nodes, as the one mounted in the MDG theONE.

The RDM Manager tab shows all RDM-enabled output ports in the upper pane, and all discovered RDM devices in the lower.



Discovery is very simple. Select one port or as many as you wish. Click the "Discover RDM Devices" button. The Latest Action bar will turn green as discovery is completed on each port. The number of responders found on each port is listed under the "# RDM Devices" column. Details of all RDM responders will be reported in the lower pane.

To review PIDs, select a specific RDM responder, and then choose Device Details either from the RDM Manager Menu tab or from the right-click menu.

FOR FURTHER DETAILS, READ THE PATHPORT MANAGER MANUAL.

USB CONTROL AND DIAGNOSTIC

The ***MDG theONE*** can now be connected to a Windows PC via an USB cable and interact with a Windows dialog Terminal.

Contact the MDG Service to have the last package for the MDG Terminal.

BOOTLOADER

The ***MDG theONE*** uses a BootLoader, also called boot manager. This small program is a firmware (software embedded in a hardware device) located into the non-volatile memory of the microcontroller unit (MCU) that allows in-circuit reprogramming of the device using its USB communication ports.

To upgrade the firmware, you will need:

- a computer running under windows, with a USB 2.0 connector
- special driver for the USB, included in the package,
- a standard USB 2.0 cable, A to B Male/Male type

Contact the MDG Service to have the last package firmware upgrade for the ***MDG theONE***.

TOURING RACK

The MDG rack of the Touring version is made of 6061-T6 aluminum tubing (1.5" nominal) and plates.

The rack is equipped with the following:

- a 20 L (5.28 US gal.) bottle
- an external fan
- Four (4) swivel caster wheels with a load capacity of 133 kg (330 lbs) per wheel. Two wheels have a full brake.
- A tool drawer.

The rack can be equipped with any kind of gas bottles, from 150 to 200 mm (6" to 8") in diameter, with a maximal height of 915 mm (36").

A series of high pressure pigtails allows the user to connect the most common standard CO_2 bottles to the ***MDG theONE***.

The MDG Touring rack is engineered to hook under a truss with all the following components:

- theONE fog generator
- Two (2) gas bottles, fully loaded
- One (1) fluid reservoir 20 L (5.28 US gal), fully loaded
- External MDG fan.

The total weight is around 120 kg (265 lb). See **Rigging the Touring Rack** paragraph for details.

The MDG Touring rack is also engineered to be stacked on another MDG Touring rack. See **Stacking the Touring Rack** paragraph for details.

WARNING
Users should inspect the rack for any bends, bumps, cracks, holes, etc, that might have been caused to the frame by abuse or inadequate storage and handling.

Do not use damaged structures until a thorough inspection and /or repair procedures is carried out.

WARNING
Severe load conditions such as shocks due to the unit being dropped, impacted by handling equipment, uneven loads, and wind loads have not been analyzed since there was no specific requests by the end customer.

These loads could cause permanent damage and this could lead to premature failure under more normal operating conditions.

HOW TO INSTALL THE FLUID RESERVOIR

Place the MDG fog fluid reservoir (Use only MDG Neutral fog Fluid) in the touring rack.

Attach the buckle strap. We recommend having the buckle strap passing through the handle of the reservoir as shown on the picture.

Attach the safety cable. We recommend having the safety cable passing through the handle, then several times around structural tubes as shown on the picture.

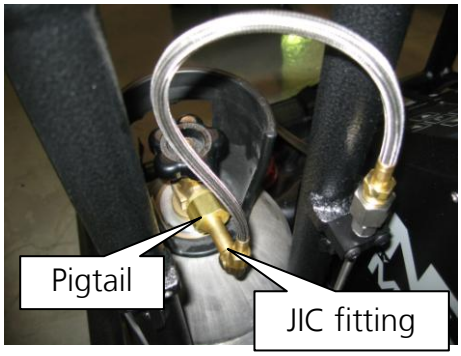
Replace the seal liquid reservoir cap with the cap equipped with the liquid line and the vent. Keep seal cap for future use.

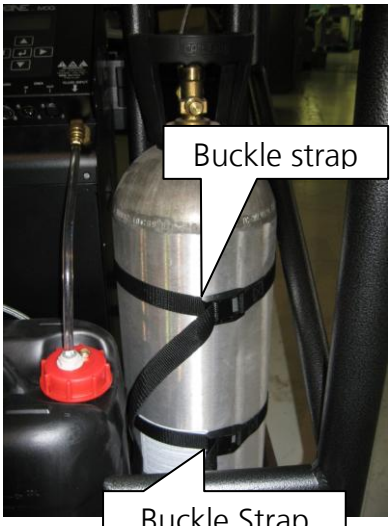
Insert the liquid line in the liquid input fitting (push-in fitting).

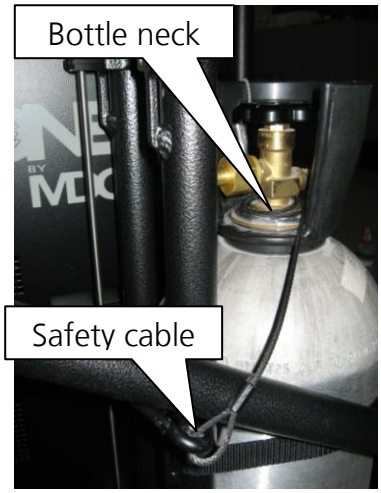
HOW TO MOUNT A GAS BOTTLE

Depending of the height of your bottle (maximum of 915 mm, i.e. 36"), you may use the lower and the middle straps, or the lower and the upper straps.

Place the gas bottle in the rack. The gas bottle must be tangent to the two vertical tubes as shown on the picture, in such a way that the pigtail (gas exit) will be located between these two tubes.







Attach the buckle straps.

Mount the proper pigtail to the gas bottle.

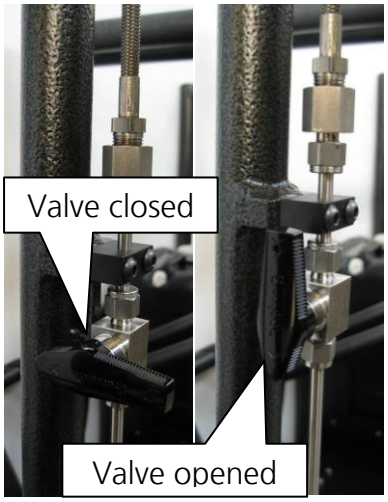
Connect the pigtail to the pneumatic line (JIC 37° flare fitting). Be careful, to make smooth bends with the high pressure hose.

Attach the safety cable.

We recommend having the safety cable passing several times around the bottle neck, then around structural tubes as shown on the picture.

HOW TO REPLACE A GAS BOTTLE

The Touring rack is equipped with a ball valve on each gas lines. Therefore, it is possible to replace the gas bottle while the fog generator is working.



To proceed:

1. Close the gas bottle
1. Close the ball valve
2. Replace the gas bottle (see *How to mount a gas bottle* for more details)
3. Open the gas bottle
4. Open the ball valve

EXTERNAL FAN

The touring rack comes with an external fan for the MDG theONE.

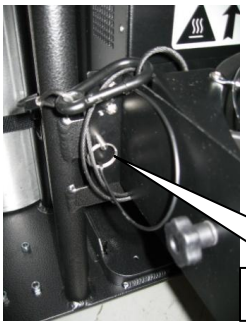
The 10" external fan (900 CFM, 24 VDC) will improve tremendously the dispersion of the haze (or the fog) in large areas.

There is two different ways to install the fan on the rack, depending if the user wants to disperse the fog upward (floor installation), or downward (rigging installation). The fog or haze jets should never go through the fan.

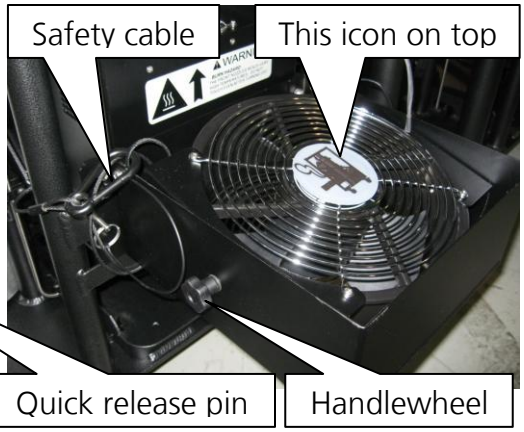
Upward dispersion

Mount the fan below the fog nozzle for upward fog dispersion.

Just pin the fan at the position below the nozzle. Verify the fan support is horizontal, and insert the quick release pins on both sides.



Attach the safety cable. We recommend having the safety cable passing inside the fan support, then several times around structural tube as shown on the picture.



Rotate the fan to have the configuration icon on top of the fan, and slightly incline the fan to have a downstream dispersion. Be careful to tighten the two handlewheels on both sides.

Connect the three (3) contacts DMX cable to the MDG theONE's front receptacle.

Downward dispersion

Mount the fan above the fog nozzle for downward fog dispersion.

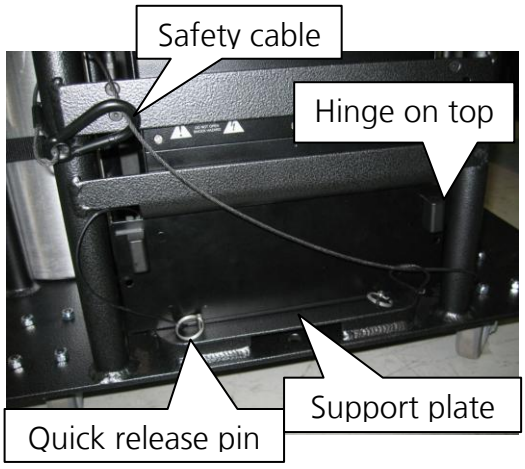
Just pin the fan at the position below the nozzle. Verify the fan support is horizontal, and insert the quick release pins on both sides.

Attach the safety cable. We recommend having the safety cable passing inside the fan support, then several times around structural tube.

Rotate the fan to have the configuration icon on top of the fan, and slightly incline the fan to have a downstream dispersion. Be careful to tighten the two handlewheels on both sides.

Connect the three (3) contacts DMX cable to the ***MDG theONE***'s front receptacle.

Transportation



When the external fan is not used, it can be stored under the ***MDG theONE*** generator.

DO NOT FORGET TO DISCONNECT THE DMX cable, and to remove the quick release pins.

Insure that the fan is horizontal, and place the DMX cable inside the fan support.

Slide the fan below the fog generator, with the metal hinge on top until you see two holes on the support plate. If you feel some resistance, pull upward the back of the fan.

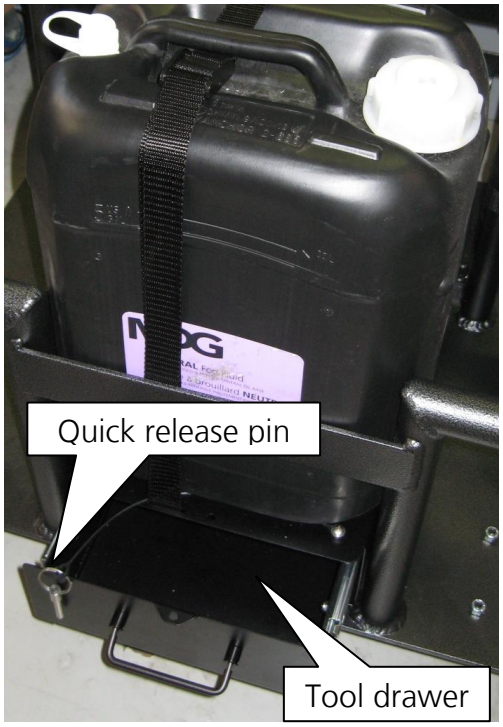
Insert the quick release pins in the two holes of the support plate.

Attach the safety cable as shown on the picture.

TOOL DRAWER

The last version of the Touring rack is now equipped with a tool drawer located below the fluid reservoir.

DO NOT FORGET to insert the quick release pin to lock the tool drawer during transportation or when the Touring rack is rigged.

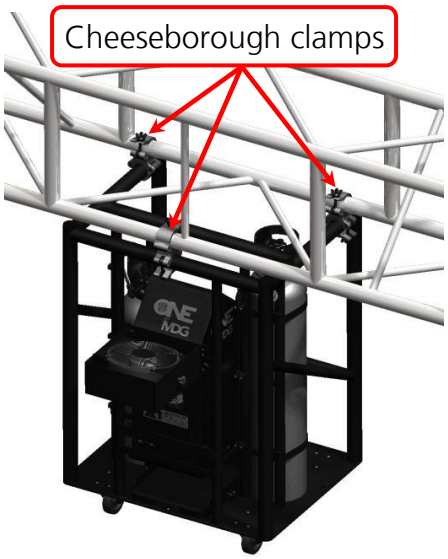


RIGGING THE TOURING RACK

The MDG theONE touring Rack can be hooked under a truss with **three (3) Cheeseborough Clamps**.

We recommend using the T57100 Series Cheeseborough clamp from Doughty Engineering with a **Safety Work Load of 750 kg** (1650 lb) per clamp:

- Parallel couplers, P/N: T57104 or T57114
- 90 degree fixed coupler, P/N: T57102 or T57112
- Swivel coupler, P/N: T57100 or T57110.



In these conditions, FEA analysis model gives a safety factor around eight (8), which exceeds the standard requirements of ESTA for rigging fixtures.

WARNING

Rigging requires qualification and technical skills.

Improper installation can result in bodily injury or damage property.

WARNING

NEVER HANG THE MDG TOURING RACK ABOVE AUDIENCE.

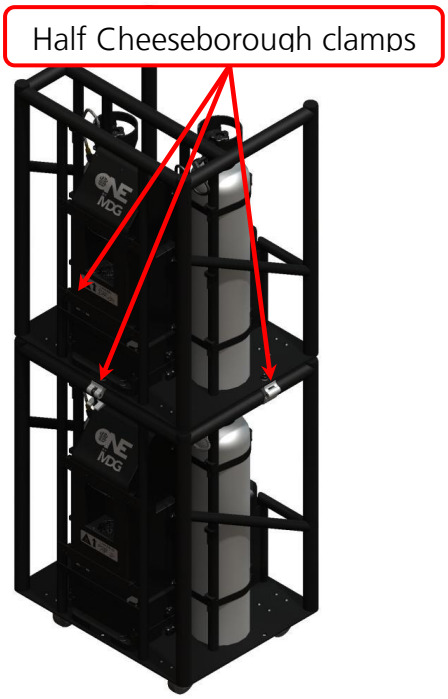
WARNING

NEVER HANG THE MDG TOURING RACK ABOVE ELECTRICAL OR FLAMMABLE DEVICES.

STACKING THE TOURING RACK

We recommend using the three (3) T57000 Series Half Cheeseborough from Doughty Engineering with a **Safety Work Load of 750 kg** (1650 lbs, P/N: T57000 or T57010).

Do not stack more than two (2) racks high.



TROUBLESHOOTING

Contact MDG, if symptoms are not listed, or if the provided solutions fail to resolve the issue.

Table 2: Symptoms and Solutions

Symptoms	Probable Causes and Suggested Actions
The generator does not switch On	• Verify that AC power cord is properly connected on both ends. • Check the fuse or the breakers of your VAC entry. The wattage of the generator is 1480 W. • Verify the AC voltage on the power cord. 100~250 VAC.
The generator does not produce fog	• Verify that the Unit is ON («CONTROL ▸ UNIT ▸ ON») • Verify that the UNIT is READY («STATUS ▸ STATE = READY») The generator needs approximately eight (8) minutes to be ready. • Verify that the Unit is not in a FAIL state («STATUS ▸ STATE = FAIL») If Yes, check the symptoms below • Verify the communication mode («INTERFACE ▸ COMM.») You cannot control the generator locally if you are in DMX mode, and vice-versa. • If you are in DMX mode: - Verify the cable - verify the DMX Start address and the channels • If you are in Network mode: - Verify the cable - Verify the Node status - Verify the RDM ID number - Verify the Universe parameters and the DMX Start Address
	…/…

Symptoms	Probable Causes and Suggested Actions
«STATUS ▸ STATE = FAIL» Verify the error messages: «STATUS ▸ ERROR = xxxx »	• Error = REFILL - Verify fluid level in the external reservoir - Verify that the filtered end of the fluid line is properly submerged and unobstructed in the fluid container - Verify that the fluid line is properly connected and not leaking • Error = P. LOW - Open the gas bottles and the ¼ turn valves on the Touring rack - Verify the pressure in the gas bottle (check the gauge, on top of the generator) - Verify the gas line - Verify the reading of the pressure transducer «STATUS ▸ PRESSURE» • Error = P. HIGH - Verify the reading of the pressure transducer «STATUS ▸ PRESSURE» - You may have a malfunction of a solenoid valve. Restart the generator, and check both modes (Fog/Haze) during several minutes. Please contact the Service if this problem persists. • Error = HEATER - This is a heating timeout, due to a cartridge heater problem. - Restart the generator and check the heating status «STATUS ▸ STATE = xx% HEAT». If the heating value is not progressing, you have a cartridge problem. - Restart the generator in 100-130 VAC. Please contact the Service if this problem persists.
	…/…

	• Error = T. HIGH - Restart the generator. This is generally due to an electronic problem. Please contact the Service if this problem persists. • Error = T. SAF - Restart the generator. This is generally due to an electronic or sensor problem. Please contact the Service if this problem persists. • Error = PCB HIGH - Verify that the vents area are not blocked - Stop the MDG theONE, if it is possible - Try to change the position of the MDG theONE to a cooler place Please contact the Service if this problem persists. • Error = WD RESET - Restart the generator. Please contact the Service if this problem persists.
LCD displays strange letters or does not seem to work normally	In some conditions (Radio transmission or static discharges), the LCD may lose its settings. The generator is still working, but the LCD displays strange or no characters: - Wait 30 seconds without touching any key, until the LCD saver starts - Press any key If the menu does not reappear, restart the generator. Please contact the Service if this problem persists.

MDG *theONE* SPECIFICATIONS

Series	***theONE*** Atmospheric Generator
Fog output:	85 m^3 (3000 ft^3) per minute in Fog mode, at full pressure
Total Running Time (Touring†):	Fog mode 15 hours at 275 kPa / 40 psi 41 hours at 69 kPa / 10 psi Haze mode 50 hours at 207 kPa / 30 psi 120 hours at 69 kPa / 10 psi
Fog colour:	Pure white
Particle size:	0.5 to 0.7 microns
Fluid consumption:	Fog mode 1 L (0.26 US gal) per hour at 275 kPa / 40 psi 0.5 L (0.12 US gal) per hour at 69 kPa / 10 psi Haze mode 55 mL (1.63 oz) per hour at 207 kPa / 30 psi 12 mL (0.35 oz) per hour at 69 kPa / 10 psi
Fluid type:	MDG Neutral ™ Fog Fluid ONLY – M.S.D.S. available on request
External fluid reservoir:	20 L (5.28 US gal) bottle
Gas type:	Industrial Grade CO_2 or N_2
Gas pressure input:	17.2 MPa / 2500 psi
Gas consumption:	Fog Mode 1.16 kg (2.56 lb) per hour at 275 kPa / 40 psi 0.44 kg (0.97 lb) per hour at 69 kPa / 10 psi Haze Mode 0.35 kg (0.77 lb) per hour at 207 kPa / 30 psi 0.15 kg (0.33 lb) per hour at 69 kPa / 10 psi
APS:	Automatic Purging System
Warm-up time:	Under 10 minutes
Operating voltage:	100-250 VAC, 50/60Hz, 1 phase
Power consumption:	1100 W @ 100 VAC, 1480 W @ 250 VAC
Control signal:	Manual USB (diagnostic & Bootload) DMX / RDM Protocol ArtNet Pathport Protocol Strand Shownet ETC Net2 eDMX Streaming ACN (E1.31 sACN)/ETC Net3

† 2 x 9 kg (20 lb) CO_2 or N_2 gas bottle, 20 L (5.3 US gal.) Fog Fluid container

Noise emission (at 1 m/3.3 ft)	45 - 60 dB	**theONE Standalone**
	45 - 70 dB	**theONE Touring**
Operating temperature:	-30 °C (-22 °F) to 50 °C (122 °F)	
Operating humidity:	90 % relative humidity @ 50 °°C (122 °F), non-condensing	
Storage temperature:	-40 ° C (-40 ° F) to 60° C (140 ° F)	
Storage humidity:	80% relative humidity @ 60° C (140 ° F)	

theONE Standalone:

- Dimensions	61 cm (24”) H x 25 cm (10”) W x 30 cm (12”) D
- Weight:	23 kg (50 lb)

theONE Touring (including rack):

- Dimensions	106 cm (42”) H x 76 cm (30”) W x 61 cm (24”) D
- Weight:	120 kg (265 lb)

MAINTENANCE

This section covers the maintenance of your *MDG* ***theONE***. The useful life of the MDG theONE will be extended by carefully following the procedures and maintenance schedule outlines in the Table below.

Table 3: Maintenance Schedule

Maintenance Action	Timetable	Procedure	Power Off
Ensure that enough MDG Neutral fluid is available for the day's use	Daily	Replace/replenish fluid supply	NO
Ensure that enough gas is available for the day's use	Daily	Replace/refill gas bottle	YES
Check the touring rack for any bends, bumps, cracks, holes, etc.	Weekly	Repair or replace	YES
Clean exterior of the MDG theONE	Monthly	Using a clean damp sponge with mild soap	YES
Inspect all fluid and gas **lines** for leaks	Monthly	Replace any leaking line	YES
Inspect all fluid and gas **fittings** for leaks	Monthly	Tighten or replace any leaking pipe	YES

LIMITED WARRANTY

Limited 2 years Warranty

When installed and operated as recommended, MDG Fog Generators Ltd guarantees that this product will remain free of defects in parts and labor for a period of two (2) years from the moment it is delivered. This warranty does not apply if the product has been modified without our written authorization, or repaired without a written authorization from MDG or at one of its authorized service centre, or if it is used under conditions for which it has not been designed for, or if a non MDG FOG FLUID™ as been used. MDG Fog Generators Ltd is not responsible for any damages resulting from a faulty installation or from abusive use of the product.

If any device is found unsatisfactory under the terms of this warranty, MDG Fog Generators Ltd will repair or replace it free of all charges except transportation costs.

This warranty applies only to the product itself and MDG Fog Generators Ltd declines responsibility for any losses, costs, or damages resulting from its use.

MDG Fog Generators Ltd shall not be liable for consequential damage in case of any failure to meet the conditions of any warranty or shipping schedule, nor will claims for labor, loss of profits, repairs, or other expenses incidental to replacement be allowed.

The repair or replacement of the product, by MDG Fog Generators Ltd shall constitute fulfillment of all obligations to the purchaser.

No other guarantees or warranties, expressed or implied, are made by MDG Fog Generators Ltd in connection with its products. This warranty is non-transferable and applies to the original purchaser only.

To obtain satisfaction under the terms of this warranty, contact your local sales office, and we will be pleased to help you.

MDG Fog Generators ltd

DECLARATION OF CONFORMITY

Declaration of Conformity

the manufacturer:

MDG Fog Generators Ltd
10301 Avenue Pelletier
Montreal, QC, Canada, H1H 3R2

Acknowledge is sole responsibility, that the product(s):

Kind of equipment: Fog Generators

Type designation:
MAX 3000APS
MAX 5000APS
MAX 5000APS Touring / H.O.
ATMOSPHEREAPS
ATMOSPHEREAPS Touring / H.O.
theONE / Touring
Mini Max
Mega Max
SINGLE
DUAL
ICE FOG Generator / Compack
ICE FOG Touring / Q

Conform(s) to the following EEC directives:

- Low Voltage Directive 73/23/EEC dated Feb-19 1973
modified by the directive : 93/68/EEC dated Jul-22 1993

- EMC Directive 89/336/EEC Article 10.1 dated May-03 1989

are in compliance with the following norm(s) or document(s):

Safety / Low Voltage: **EN60335-1 : 1994**
A1 : 1994 and **A11 : 1995** and **A12 : 1996**

EMC: **EN55014-1 : 1993** and **EN55014-2 : 1997**
EN61000-2 : 1995 and **EN61000-3 : 1995**

Martin Michaud, Director
Montreal, Canada, 25 May1999

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NOTES